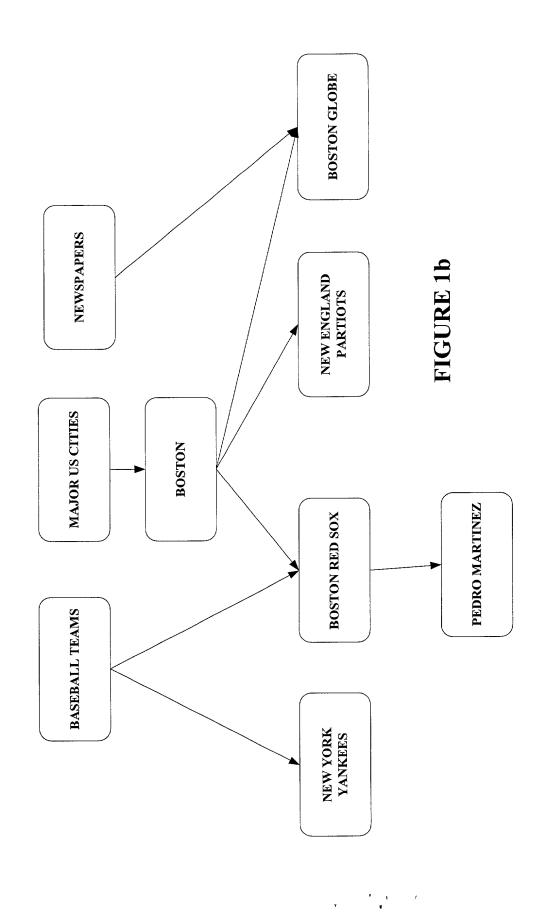


FIGURE 1a



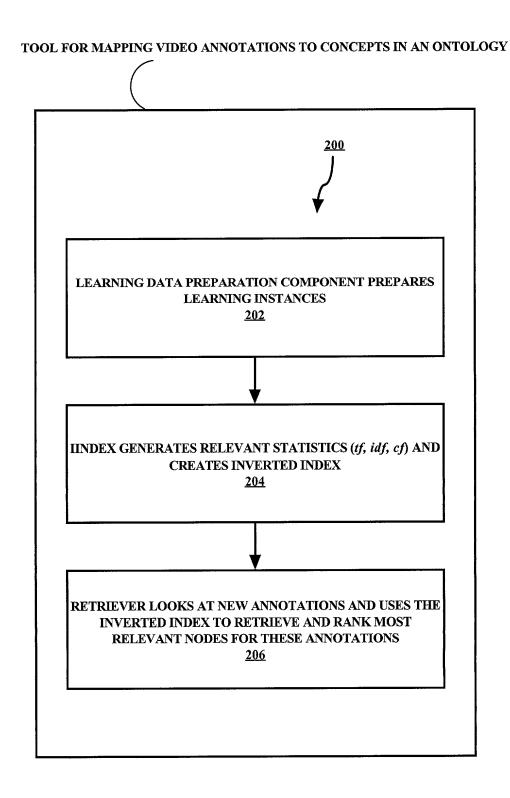


FIGURE 2

LOOKING AT DATA DERIVED FROM PAST MAPPINGS OF ANNOTATIONS AND CAPTIONS TO ONTOLOGY.

300

FUSING ALL ANNOTATIONS THAT ARE MAPPED INTO THE SAME NODE IN THE ONTOLOGY INTO A LEARNING INSTANCE FOR THAT NODE. $\underline{302}$

FIGURE 3

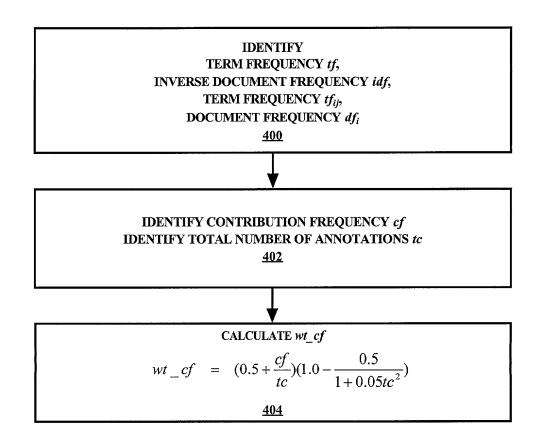


FIGURE 4

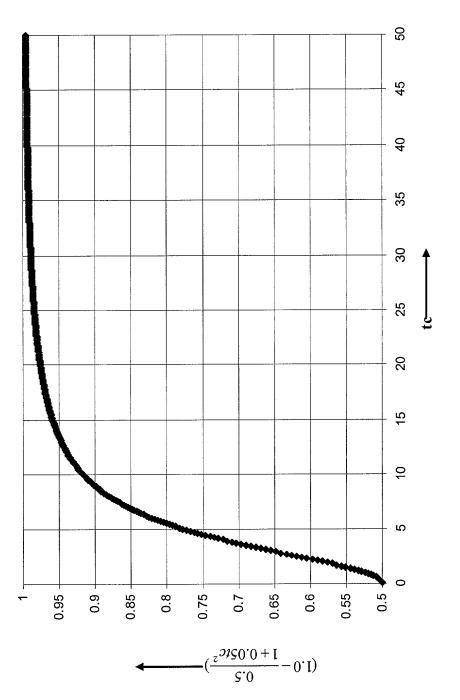


FIGURE 5

CALCULATE CONTRIBUTION OF THE TERM FREQUENCY TO THE WEIGHT OF A QUERY TERM

Normalized
$$_{t}f_{ij} = 0.4 + 0.6 \times \frac{\log(tf_{ij} + 0.5)}{\log(\max_{t}f_{j} + 1)}$$

CALCULATE INVERSE DOCUMENT FREQUENCY NORMALIZED BY THE TOTAL NUMBER OF DOCUMENTS

$$idf_{i} = \frac{\log(\frac{N}{df_{i}})}{\log(N)}$$

$$\frac{604}{\log(N)}$$

WEIGHT CONTRIBUTED TO A PARTICULAR CATEGORY IN THE ONTOLOGY BY THE OCCURRENCE OF WORD i IN LEARNING VECTOR j

$$wt_y = (0.4 + 0.6 \times Normalized _tf_y xidf_j) \times wt _cf$$

$$\frac{606}{}$$

FIGURE 6



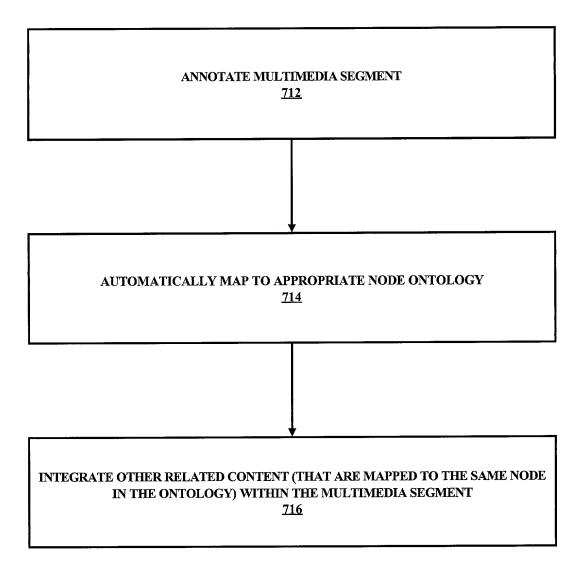


FIGURE 7

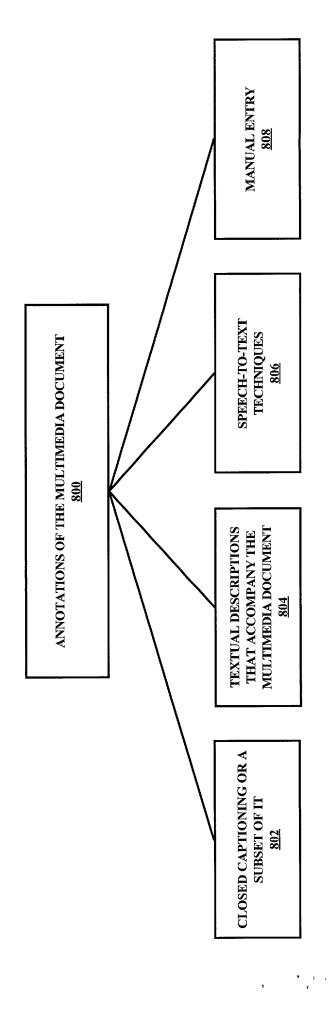


FIGURE 8